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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/632,739      | 08/04/2000  | Clyde C. Bryant      | E025 1031           | 6690             |

7590 12/17/2002  
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Atlanta, GA 30358-2601

EXAMINER

KOCZO JR, MICHAEL

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

3746

DATE MAILED: 12/17/2002

23

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/632,739

Applicant(s)

BRYANT, CLYDE C.

Examiner

Michael Kocz, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 26,28,36-40,42-50,52-57,59,60,62-64 and 72-88 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 42-50,52-57,59,60 and 74 is/are allowed.
- 6) ☒ Claim(s) 26,28,36-40,62-64,72,73 and 75-88 is/are rejected.
- 7) ☒ Claim(s) 83/82/80,85/84,80 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 19.
- ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other:

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**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 72, 26/72, 28/72, 73, 36/73, 37/73, 38/73, 39/38/73, 40/73, 62, 63, 64, 75, 76, 36/76, 37/36/76, 38/76, and 39/38/76 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 72, 73 and 75, there is no description in the specification of "adjusting the air charge volumes within the cylinder". The volume of a cylinder is a function of the position of the piston within the cylinder. This is not readable as an "adjustment".

Regarding claim 76, there is no description of how the "air charge density" is adjusted.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 72, 26/72, 28/72, 73, 36/73, 37/73, 38/73, 39/38/73, 40/73, 62, 63, 64, 75, 76, 36/76, 37/36/76, 38/76, 39/38/76, 79, 36/79, 37/36/79, 38/79, 39/38/79, 40/79, 81, 82/81, 83/81, 84/81, 85/84/81, 86/81 and 87 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claims 72, 73 and 75 are indefinite because of their basis on an inadequate disclosure. The scope of these claims cannot be clearly ascertained. The "thereby" clauses in these claims furthermore merely recite a desired result. No method steps are set forth affecting the compression ratio of the engine.

In claim 79, it is not clear what is meant by "normal compression ratios".

In claims 81 and 87, it is not clear what is meant by "substandard compression ratio". Furthermore, a "cylinder" per se does not define a compression ratio.

Thorough revision of the claims is required in order to render them definite in form according to the statute.

Claims 72, 73, 36/73, 38/73, 75, 62, 63, 76, 36/76, 38/76, 77, 78, 36/78, 38/78, 79, 36/79, 38/79, 80, 82/80, 84/80, 81, 82/81, 84/81, 87 and 88, as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Mallory '176. In Mallory '176 a fuel/air mixture is aspirated into the cylinder during the intake stroke through valve 11. During the compression stroke intake valve 11 is closed and compressed air valve 14 is open. Both the fuel/air mixture and the compressed air can be throttled to control the charge density in the cylinder (col. 2, ll. 50 to 54).

Claims 26/72, 40/73, 64, 40/76, 26/77, 40/78, 40/79, 86/80 and 86/81, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Mallory '176 in view of Okimoto '844. Mallory '176 discloses the invention substantially as claimed. However, Mallory '176 does not disclose cooling the compressed air. Okimoto discloses feeding air to a first intake port 22, and feeding compressed air to a second intake port 24, substantially during the compression stroke of the piston. Okimoto also discloses cooling the compressed in intercooler 50. Cooling

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the compressed air increases its density which increases the power output of the engine. In view of this teaching, it would have been obvious to cool the compressed air of Mallory '176.

***Allowable Subject Matter***

Claims 28/72, 37/73, 39/73, 37/76, 39/76, 28/77, 37/78, 39/78, 37/79, 39/79, 83/82/81 and 85/84/81 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 83/82/80 and 85/84/80 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 42 to 50, 52 to 57, 59, 60 and 74 are allowed.

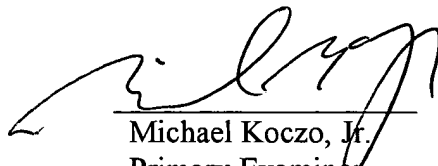
***Information Disclosure Statement***

The information disclosure statement filed on October 28, 2002 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Any inquiry relating to the status of this application or proceeding should be directed to the Customer Service Office whose telephone number is 703-306-5648.

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Any inquiry relating to patent applications in general should be directed to the Patent Assistance Center at 1-800-786-9199.



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December 17, 2002  
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